

**FIG. 1**

**DSL TRANSMISSION SYSTEM**

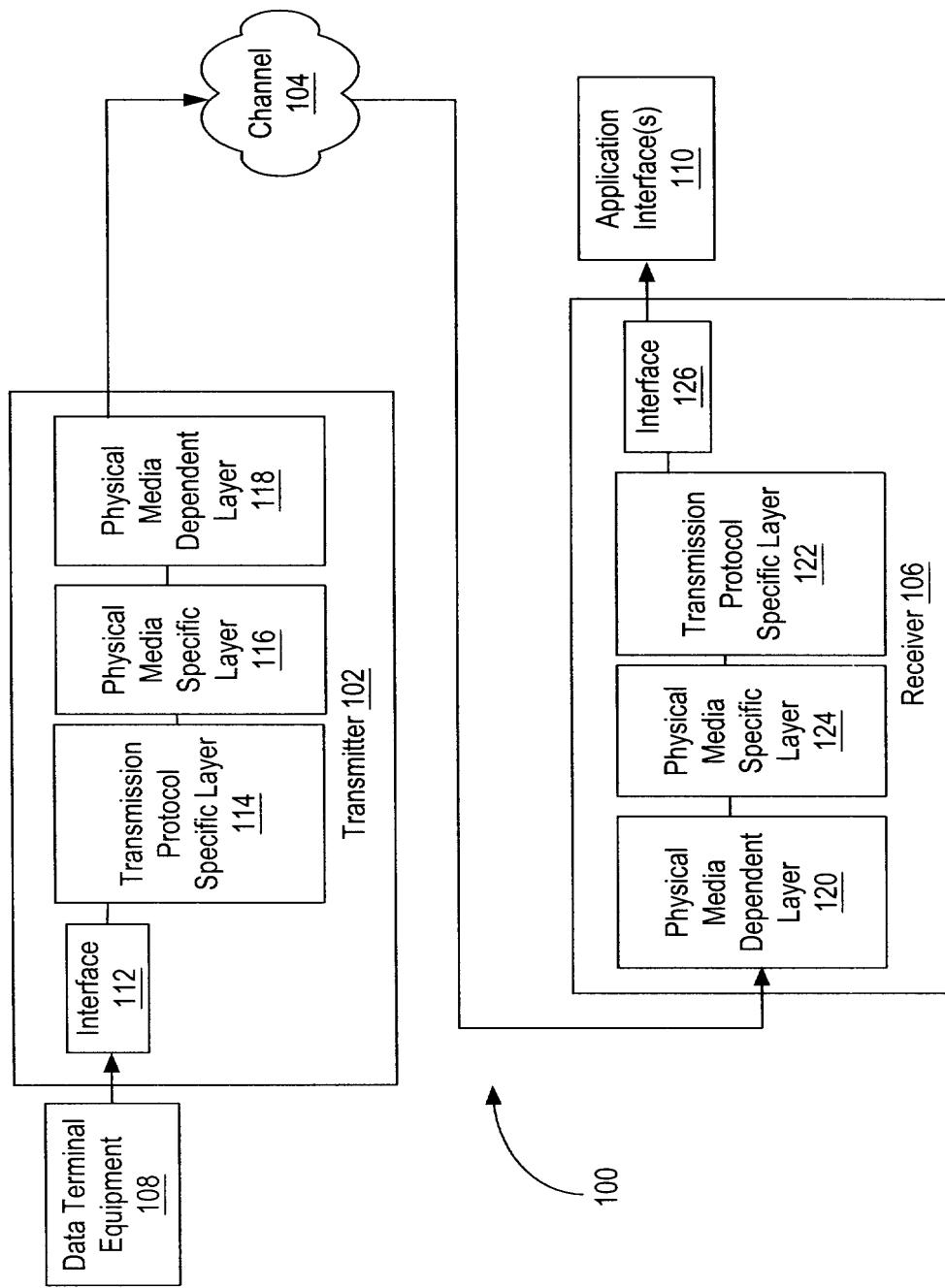


FIG. 2

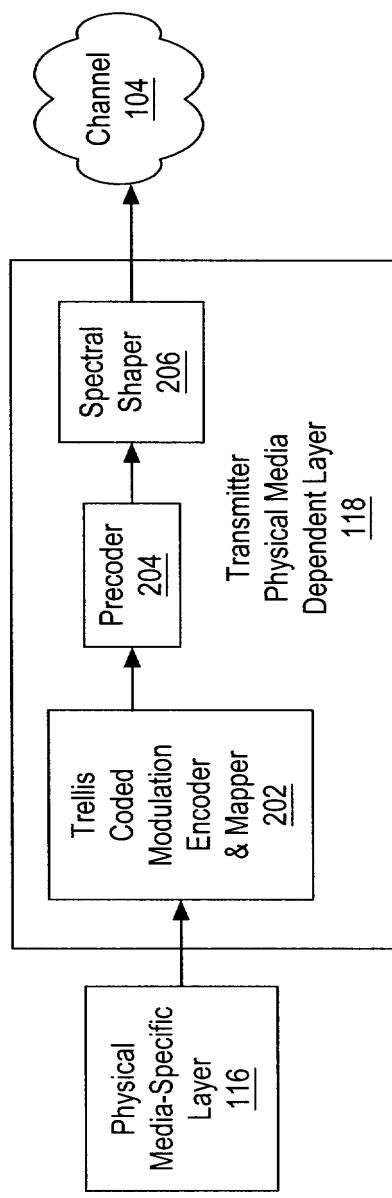


FIG. 3

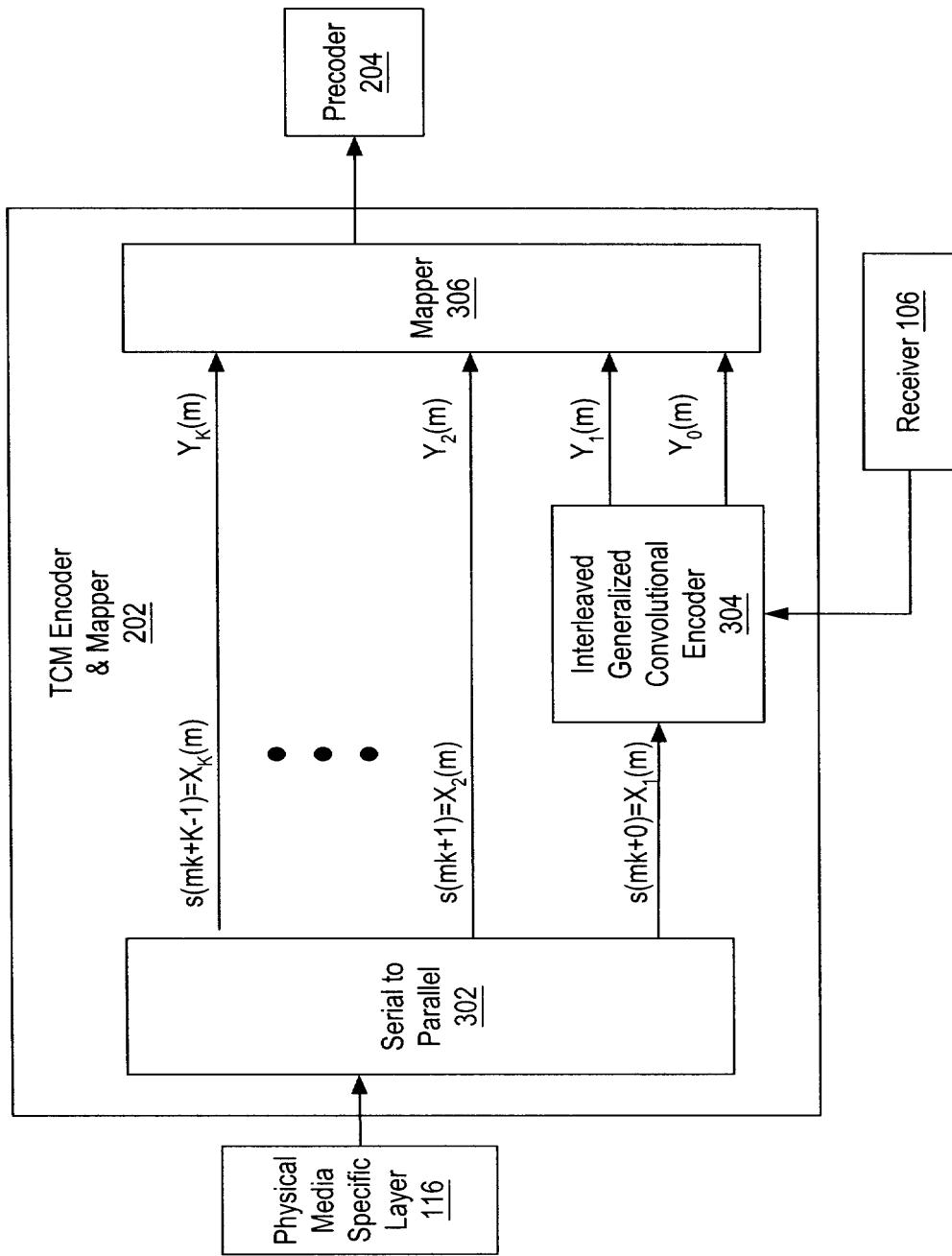
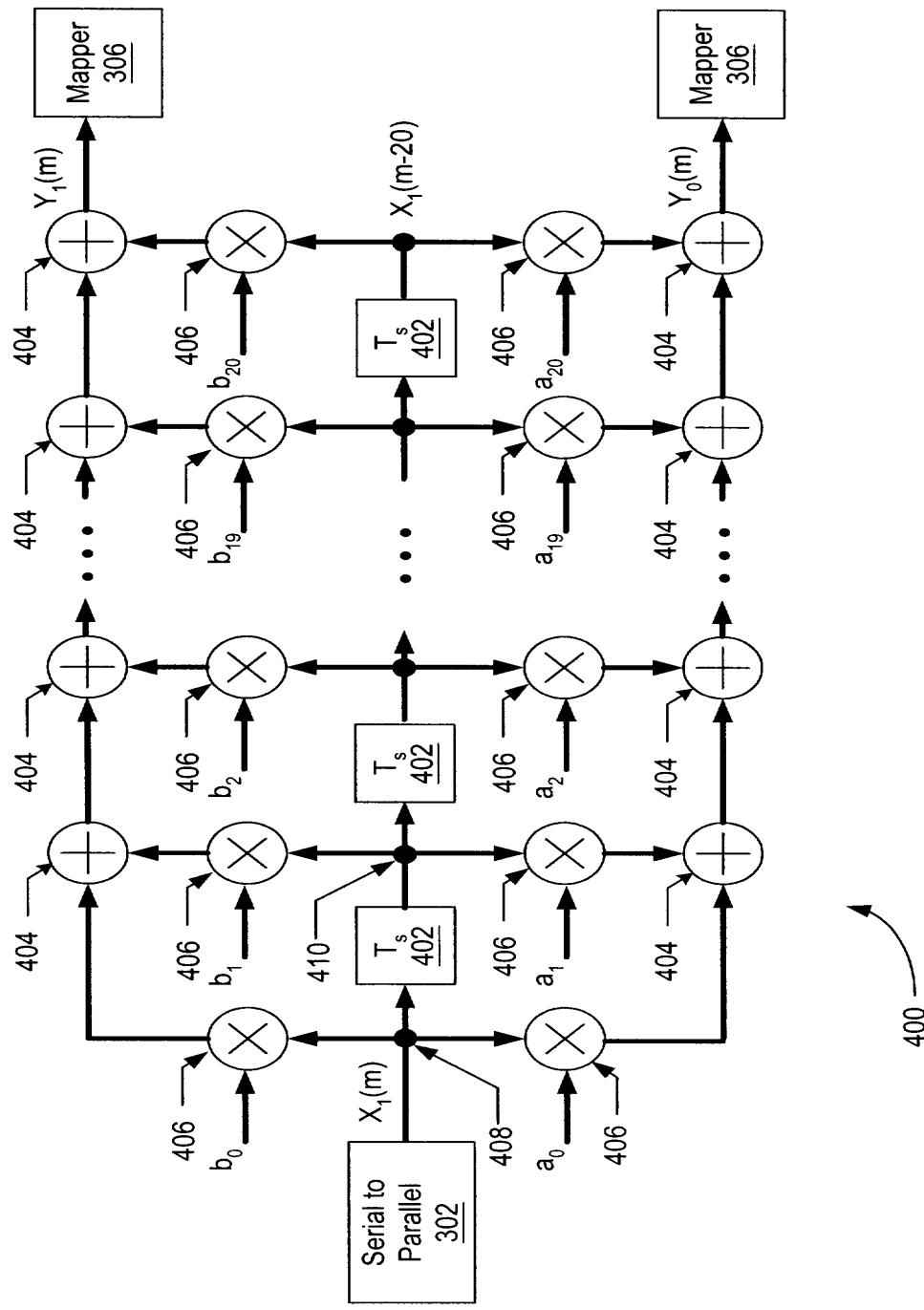
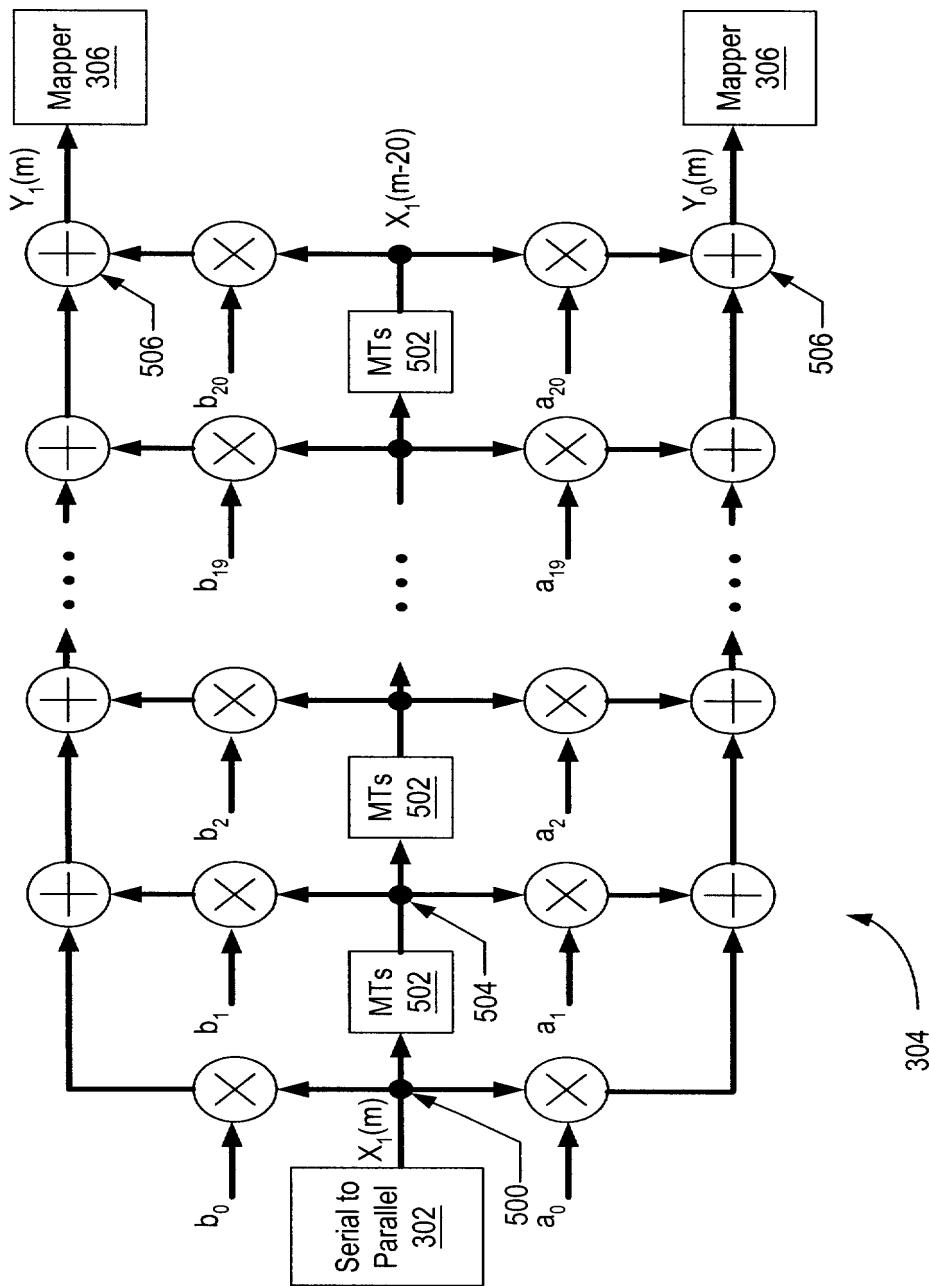


FIG. 4

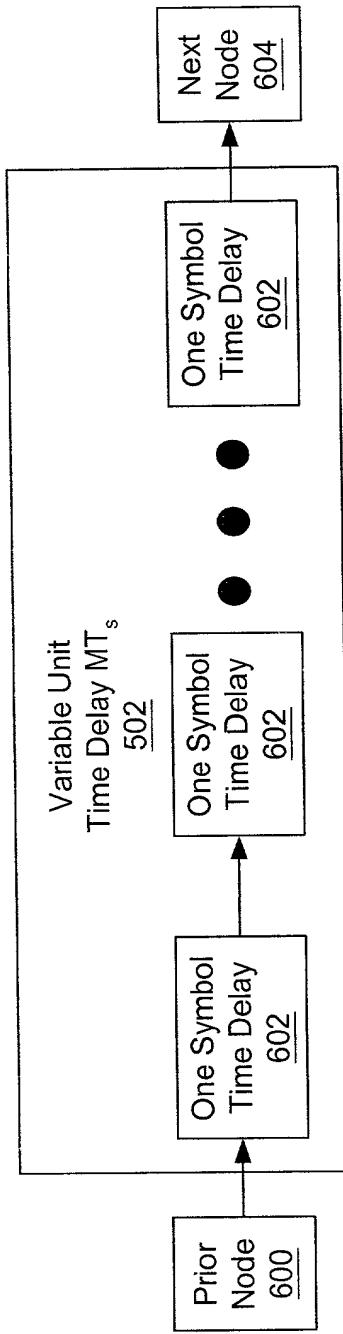
Convolutional Encoder  
(Prior Art)



**FIG. 5**  
Interleaved Generalized  
Convolutional Encoder  
(First Embodiment)



**FIG. 6**



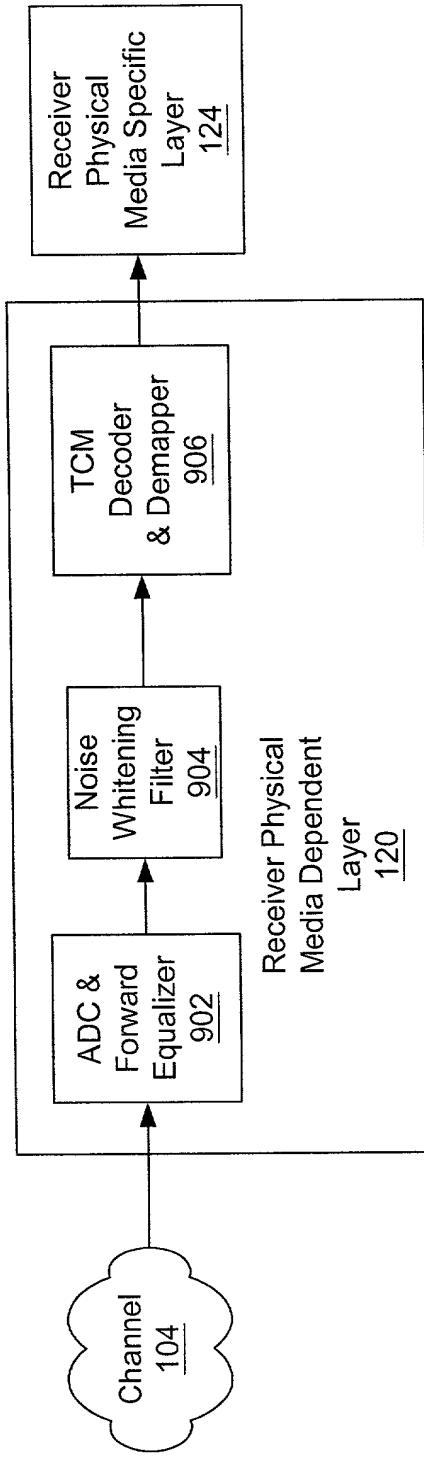
**FIG. 7**  
**Activation Frame Format (Prior Art)**

Activation Frame Bit LSB:MSB	Definition
1:14	Frame Sync for $T_c$ and $T_r$ : 11111001101011 <sub>2</sub> , where the left-most bit is sent first in time
	Frame Sync for $F_c$ : 11111001101011 <sub>2</sub> , where the left-most bit is sent first in time
15:36	Precoder Coefficient 1: 22 bit signed two's complement format with 17 bits after the binary point, where the LSB is sent first in time.
37:58	Precoder Coefficient 2
59:3952	Precoder Coefficients 3 – 179
3953:3974	Precoder Coefficient 180
3975:3995	Encoder Coefficient A: 21 bits where the LSB is sent first in time
3996:4016	Encoder Coefficient B: 21 bits where the LSB is sent first in time
4017:4144	Vendor Data: 128 bits of proprietary information
4145:4211	Reserved: 67 bits set to logical zeros
4212:4227	CRC: $c_1$ sent first in time, $c_{15}$ sent last in time

**FIG. 8**  
**Interleaved Generalized Convolutional  
Encoder Activation Frame Format**

Activation Frame Bit LSB:MSB	Definition
1:14	Frame Sync for $T_c$ and $T_r : 11110011011_2$ , where the left-most bit is sent first in time
	Frame Sync for $F_c : 11110011011_2$ , where the left-most bit is sent first in time
15:36	Precoder Coefficient 1: 22 bit signed two's complement format with 17 bits after the binary point, where the LSB is sent first in time.
37:58	Precoder Coefficient 2
59:3952	Precoder Coefficient 3 -179
3953:3974	Precoder Coefficient 180
3975:3995	Encoder Coefficient A: 21 bits where the LSB is sent first in time
3996:4016	Encoder Coefficient B: 21 bits where the LSB is sent first in time
<b>4017:4024</b>	<b>Multiplicity of Convolution Encoders, M: 8 bits where the LSB is sent first in time</b>
<b>4025:4152</b>	Vendor Data: 128 bits of proprietary information
<b>4153:4211</b>	Reserved: <b>59</b> bits set to logical zeros
<b>4212:4227</b>	CRC: $c_1$ sent first in time, $c_{15}$ sent last in time

**FIG. 9**



**FIG. 10**

